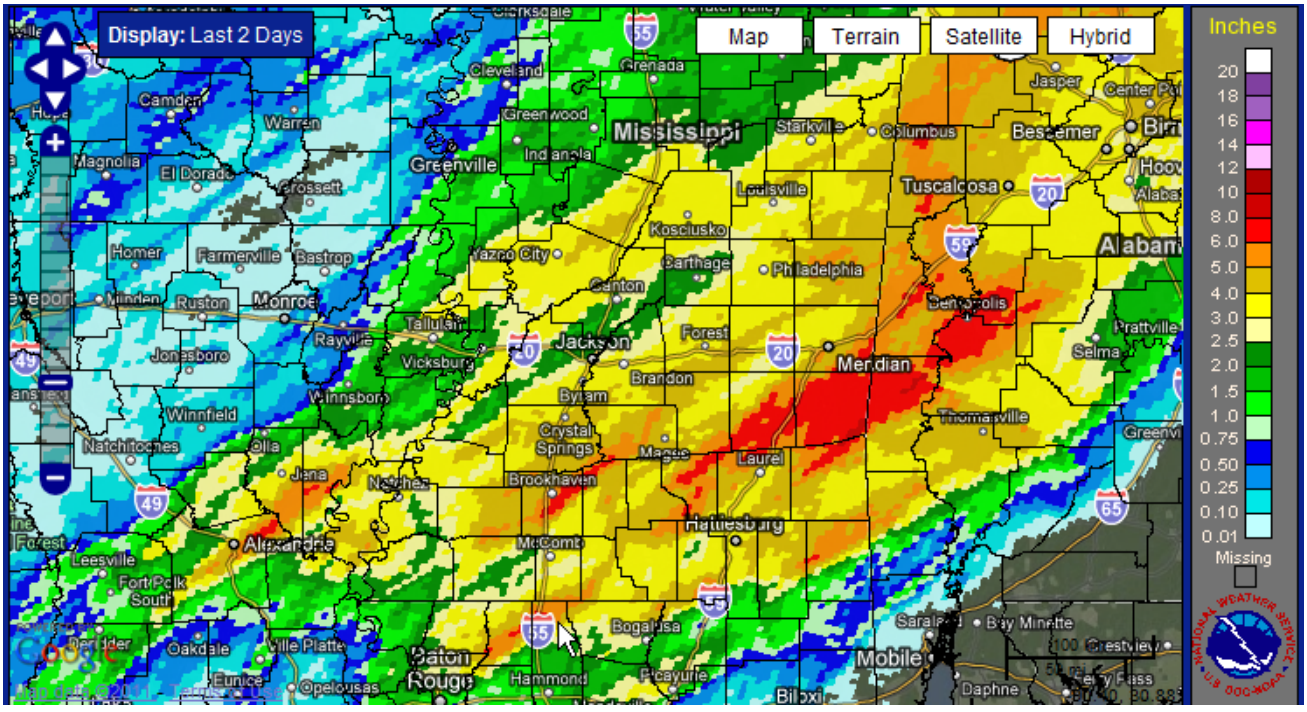
NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924)	**U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE**	HYDROLOGIC SERVICE AREA (HSA) **WFO Jackson, Mississippi**
MONTHLY REPORT OF HYDROLOGIC CONDITIONS		REPORT FOR: MONTH **March** YEAR **2011**
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283		SIGNATURE **Alan E. Gerard, Meteorologist In-Charge** DATE **04/11/2011**

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

☐ **An X inside this box indicates that no river flooding occurred within this hydrologic service area.**

Synopsis...

March was a month of contrasts. Rainfall was below to well below normal across the northern portions of Northeast Louisiana, Southeast Arkansas, and the Yazoo Delta Region of Mississippi while southern portions of Northeast Louisiana and the remainder of Mississippi in the WFO Jackson Hydrologic Service Area (HSA) had above normal to much above normal rainfall. The most significant rainfall occurred on March 08 and the early hours of the 9th where 7.00 to 10.00 inches of rainfall brought significant flash flooding to Jasper and Clarke counties and eventually major river flooding to Jones County in Mississippi



Storm-total rainfall amounts from March 8th and 9th were quite high as storms moved repeatedly over the same locations. Amounts as high as 7.00 to 8.00 inches were reported south of Meridian in Clarke and Jasper Counties

The month opened with high pressure building into the region after the passage of a cold front on the previous day. High pressure and mild temperatures remained over the area through the 3rd. High pressure shifted east on the 4th, allowing warmer temperatures and higher humidity to infiltrate the region. A cold front moved through the HSA on the 5th, bringing 0.25 to 1.00 inch of rainfall to Northeast Louisiana, Southeast Arkansas, and the Yazoo River Delta of Mississippi; 1.00 to 2.00 inches to Central, East, and Northeast Mississippi; and 2.00 to 4.00 inches to South and Southeast Mississippi.

High pressure moved into the area on the 6th and 7th. High pressure shifted east of the region on the 7th allowing warm, moist, unstable air to return to the area on the 8th. A squall line developed well ahead of a cold front bringing severe weather to much of Central and South Mississippi, including 2 tornado touchdowns in Hinds County Mississippi just after midnight, on the 9th. The most significant impact of this system was the very heavy rainfall which fell across southern sections of Northeast Louisiana, South Mississippi, and portions of East Mississippi. Rainfall across this area ranged from 2.50 to 8.00 inches. The most significant flash flooding occurred across Lincoln County and from Covington, northern Jones County, and Jasper counties into Clarke County where rainfall from 7.00 to 8.00 inches produced significant road damage. Road, bridge, and culvert damage was estimated at over 1.5 million dollars. Some structures took on water across the area as well. Major flooding occurred within the next 48 hours along Bogue Homa, Tallahoma, and Tallahala creeks as floodwater moved downstream from the excessive rainfall areas in Jasper and northern Jones. Over 100 homes were impacted by floodwater, with most of the flooding in the Laurel, MS area from Tallahala Creek. Flood damages were estimated at several million dollars across Jones County. The cold front moved through the region during the day on the 9th allowing high pressure to build into the HSA through the 11th. Some higher rainfall totals from 9th and 10th: 7.80 inches at Quitman, MS; 7.56 inches at Crandall, MS; 7.13 inches at Shubuta, MS; 7.05 inches at Pat Harrison Waterway's Archusa Water Park, MS; 6.61 inches at Hattiesburg, MS; 6.50 inches at Brookhaven, MS; 6.47 inches at Purvis, MS; and 6.45 inches at Bay Springs, MS.

High pressure began shifting eastward on the 12th and 13th, thus allowing a southerly flow to return to the area. A cold front pushed through the area on the 14th, bringing the heaviest rainfall to Central and East Mississippi where amounts ranged from 0.50 to 2.00 inches. Rainfall over the remainder of Mississippi, Northeast Louisiana and Southeast Arkansas was generally less than 0.50 inches. High pressure moved into the HSA allowing nice spring weather to return to the region through the 17th.

High pressure shifted eastward on the 18th allowing temperatures to warm to above seasonal norms. From the 19th to the 23rd, high pressure remained in control with only a dry frontal system pushing into Southeast Arkansas and North Mississippi on the 19th and washing out completely by the 20th. Warm and humid conditions prevailed through the period.

Another cold front slowly moved across the area from the 23rd into the 24th. Only some light showers were noted in Northeast Mississippi. The front stalled along the Louisiana Coast late on the 24th. On the 26th, the front lifted northward as a warm front, stalling from the Louisiana/Arkansas border to Tupelo in Mississippi. No rainfall was reported in the WFO JAN

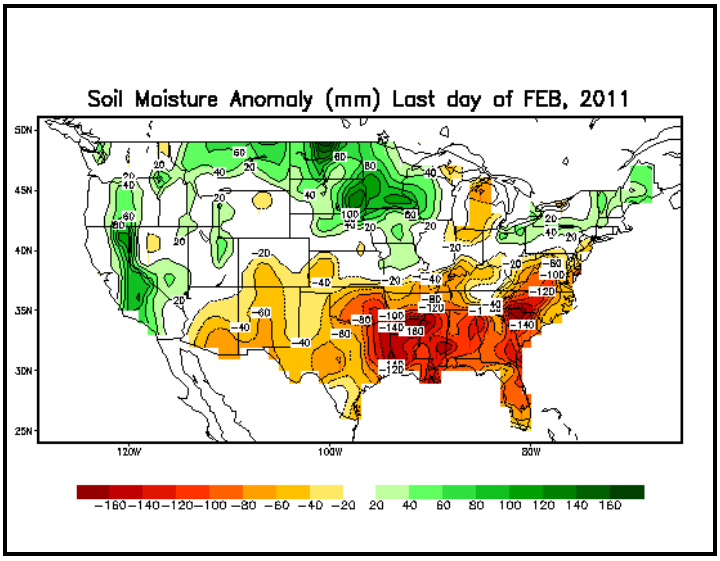
HSA. The front moved back to the south as a cold front from the 27th into the 28th, stalling once again along the Louisiana Coast. Scattered showers and thunderstorms were observed mostly north of I-20 as the front progressed to the south. Some quarter size hail was reported over Tensas Parish Louisiana as well as Warren, Neshoba, and Kemper counties in Mississippi. Rainfall amounts were around inch or less, with some isolated maximums up to 2.00 inches.

Weak high pressure prevailed across the region on the 28th and 29th. Late in the day on the 29th, a cold front progressed southeast across the HSA while a low pressure center formed along the stationary front in the Gulf of Mexico. By the morning of the 30th, the front moved to Southeast Mississippi while the low pressure center moved northeastward to the Mississippi Coast. Heavy rainfall from 1.50 to 4.00 inches fell along a line from Madison and Tensas parishes in Louisiana to Lauderdale and Clarke counties in East Mississippi and much of Southeast Mississippi. Some heavier rainfall totals for 29th and 30th: 4.01 inches at Brandon 6ENE, MS; 3.63 inches at Oakley Agricultural Experiment Station in Hinds County, MS; 3.05 inches at Hazlehurst, MS; 3.03 inches at Winnsboro 5SSE, LA; and 3.02 inches at Forest, MS. High pressure began to build into the HSA on the 30th and 31st with cooler and drier conditions.

River and Soil Conditions...

The HSA was divided along a line from Franklin Parish in Northeast Louisiana to Issaquena to Montgomery counties in Mississippi. Northwest of this line, monthly rainfall totals ranged from less than 10 percent of normal over Southeast Arkansas to near 90 percent of normal near the line. Southeast of the line, monthly rainfall totals ranged from near normal along the line to in excess of 200 percent of normal in Clarke County Mississippi.

The driest area in the HSA consisted of northern portions of Northeast Louisiana, Southeast Arkansas and much of the Yazoo Delta Region of Mississippi. This region also coincided with the area with driest long term conditions. Thus, soil moisture conditions continued to deteriorate over this region. Much of South, Southeast, and East Mississippi saw much improved soil moisture conditions due to the above normal rainfall.

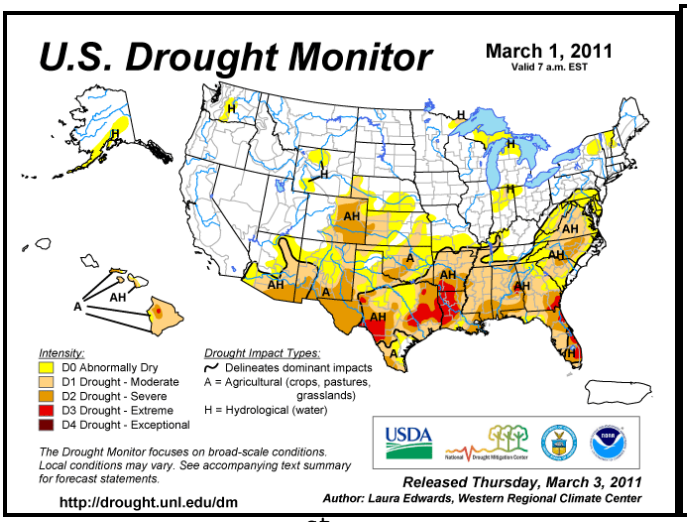


Last day of February

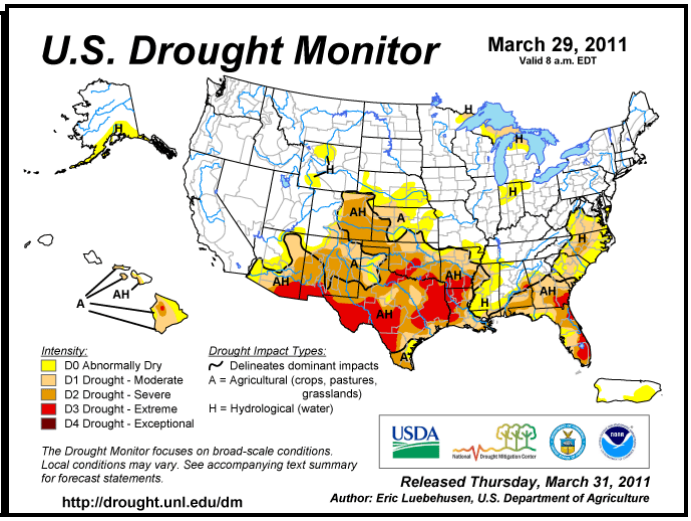
NO IMAGE FOR MARCH

Soil Moisture anomaly (departure from normal): (25.4mm = 1 inch)

A comparison of the February 1st U.S. Drought Monitor to the March 1st U.S. Drought Monitor showed drought conditions had deteriorated from Severe (D2) to Extreme(D3) over Southeast Arkansas. They remained the same over Northeast Louisiana and much of Northwest Mississippi which were at Moderate (D1) and Severe (D2). Improvement from Severe (D2) to Abnormally Dry (D0) occurred over extreme Southeast Mississippi while the remainder of Mississippi saw conditions improve from Moderate (D1) to Abnormally Dry (D0).



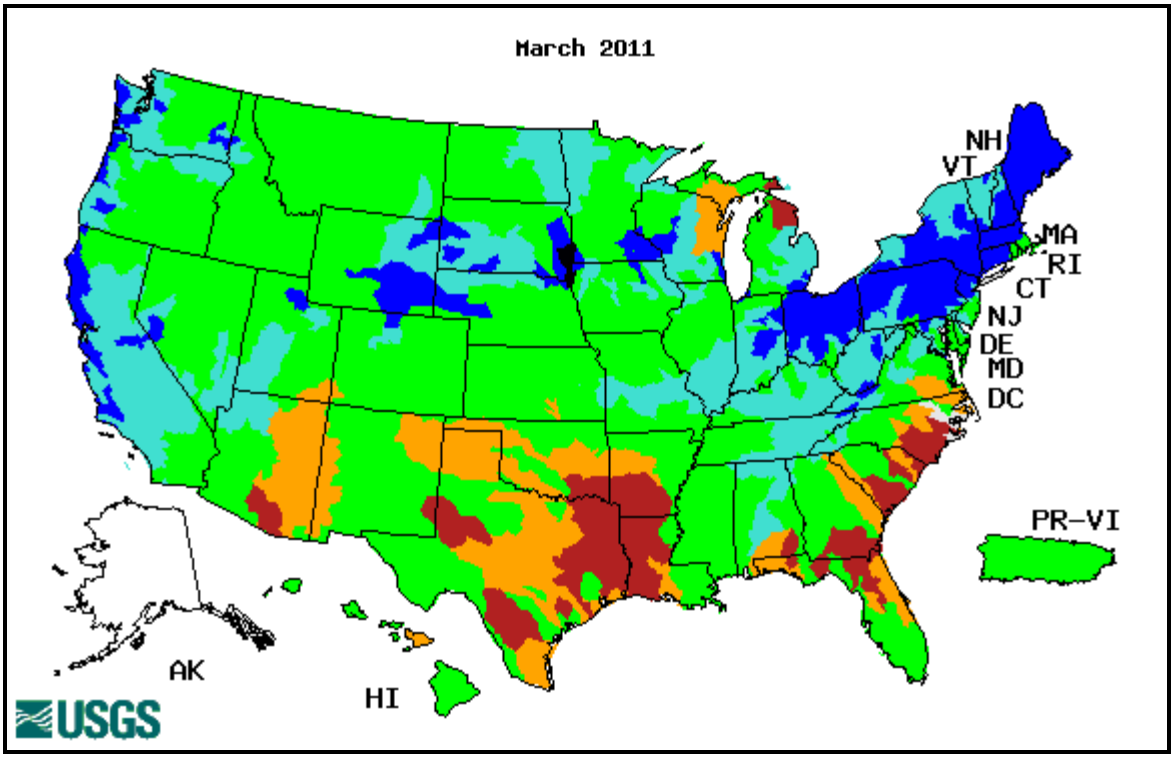
March 01st, 2011

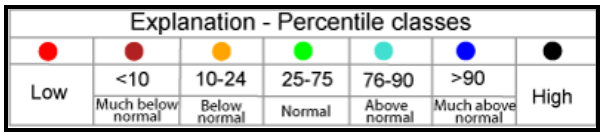


March 29, 2011

The United States Geological Survey's (USGS) March 2011 river streamflow records were compared with all historical March streamflow records. Stream flows ranged from below normal to much below normal across Southeast Arkansas and Northeast Louisiana. (Note: Image shows normal streamflow across Northeast Louisiana and portions of Southeast Arkansas…this could be

misleading due to the lack of USGS gauging across this area and high ongoing Mississippi River streamflow). Stream flow was near normal over most all of Mississippi.





Rainfall from 7.00 to 9.00 inches across southern Jasper County on the 9th produced significant flow into the Bogue Homo, Tallahoma, and Tallahala Creeks. The forecast point for the Tallahala Creek at Laurel experienced its highest crest in 20 years. Major flooding occurred as over 100 homes were impacted by floodwater from the three creeks and other smaller streams.

Rainfall across much of the Central, East, and South Mississippi on the 9th brought minor to moderate flooding on the Upper Pearl River. Minor flooding also occurred along the Lower Pearl River, Big Black River, Bouie Creek, Black Creek, Chickasawhay, Noxubee, and the Luxapalila.

Minor rises occurred along the Yazoo River basin and portions of Northeast Louisiana. Little changes were noted in Southeast Arkansas.

The Mississippi River had a significant rise during the month resulting in minor flooding by the end of the month from Arkansas to Natchez.

The flood potential below is based on the (1.)current soil moisture…current well below normal soil moisture conditions over Southeast Arkansas, much of Northeast Louisiana, and Northwest Mississippi and a remaining below normal soil profile across the remainder of Mississippi (upper soils are wet while lower soils continue to be dry); (2.)current streamflow conditions…see map above; (3.) and expected rainfall…normal rainfall pattern over northern portions of the HSA and a below normal rainfall pattern over southern portions of the HSA over the next 60 to 90 days:

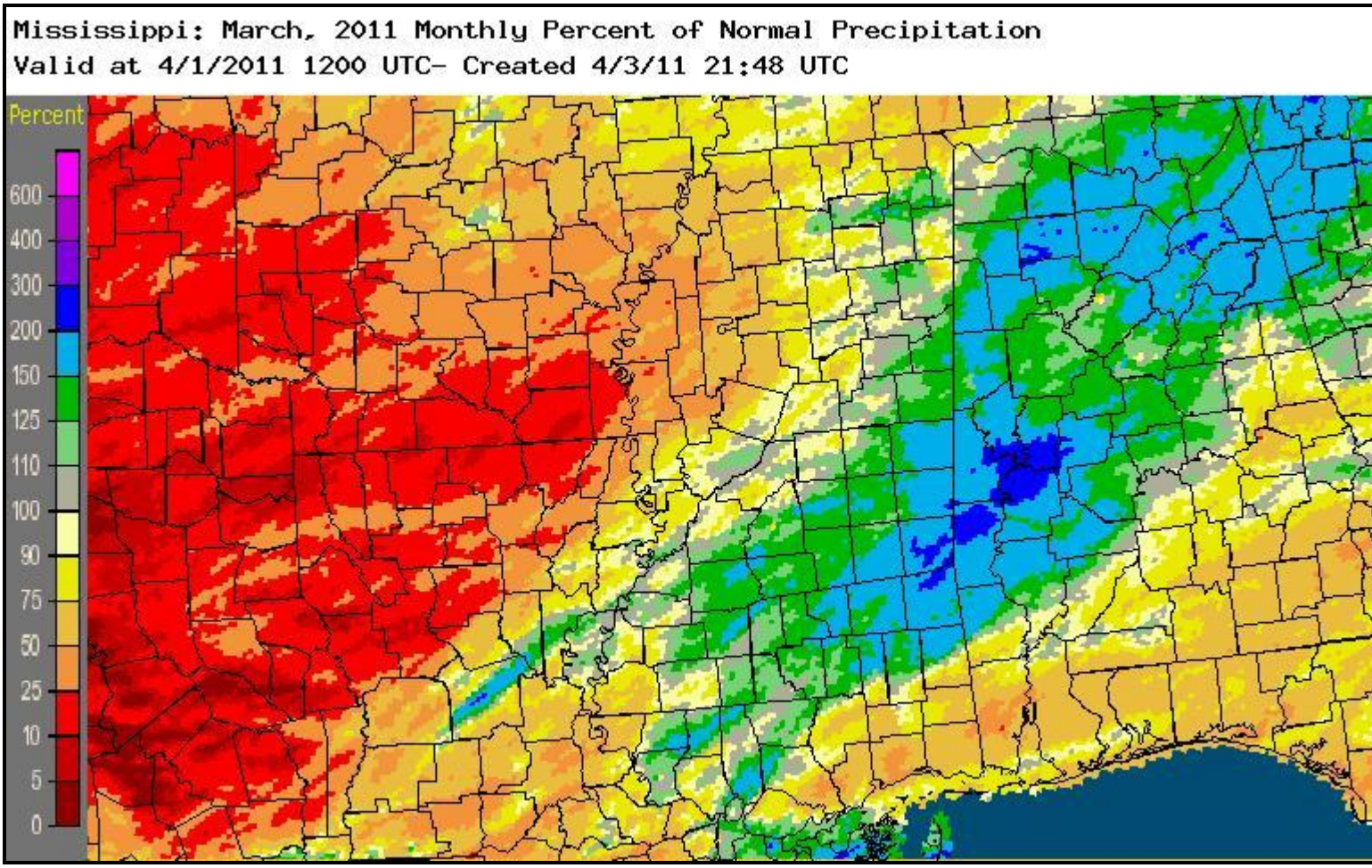
***Pearl River System*:**	**Near Normal.**
***Yazoo River System*:**	**Below Normal.**
***Big Black River System*:**	**Near Normal.**
***Homochitto River System*:**	**Near Normal.**
***Pascagoula River System*:**	**Normal to Below Normal.**
***Northeast LA and Southeast AR*:**	**Below Normal.**
***Tombigbee River System*:**	**Near Normal.**
Mississippi River:	**Normal.**

Rainfall for the month of March

The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on February 28th until 7 am on March 31st were: 14.20 inches at Shubuta, MS; 14.14 inches at Crandall, MS; 13.79 inches at Pat Harrison Waterway's Dunns Falls Water Park, MS; 13.52 inches at Quitman, MS; 13.29 inches at Pat Harrison Waterway's Archusa Water Park, MS; 12.64 inches at Purvis, MS; and 12.35 inches at Hattiesburg, MS; 11.33 inches at Brookhaven, MS; and 11.23 inches at Bay Springs, MS.

The lowest monthly rainfall totals in the HSA were: 0.95 inches at Crossett, AR; 1.25 inches at Portland, AR; 1.26 inches at Dermott, AR; and 1.53 inches at Bastrop, LA.

March 2011 Rainfall Estimates



2011 March Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

March rainfall for Selected Cities...

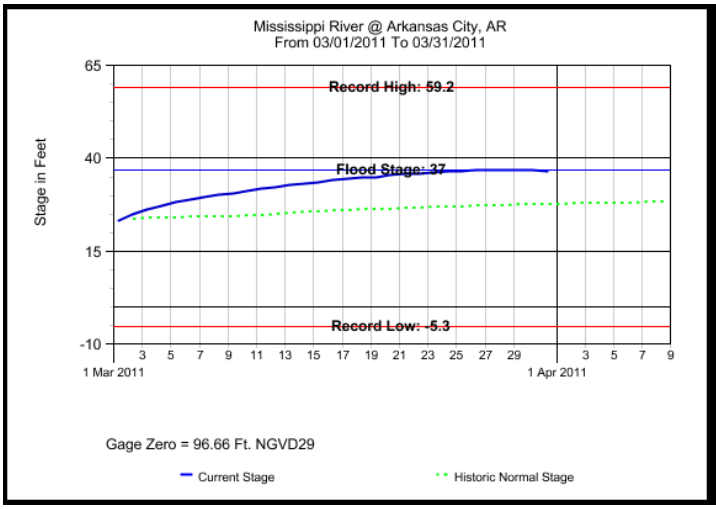
City (Airport)	March Rainfall	Departure from normal	2011 Rainfall	2011 Departure from Normal
Jackson, MS	8.72	+2.98	15.10	-0.81

Meridian, MS	9.85	+2.92	13.49	-1.61
Greenwood, MS	2.69	-3.10	7.46	-7.78
Greenville, MS	2.11	-3.70	6.01	-9.92
Hattiesburg, MS	11.42	+5.11	19.09	+0.67
Vicksburg, MS	6.15	-0.25	13.26	-4.12

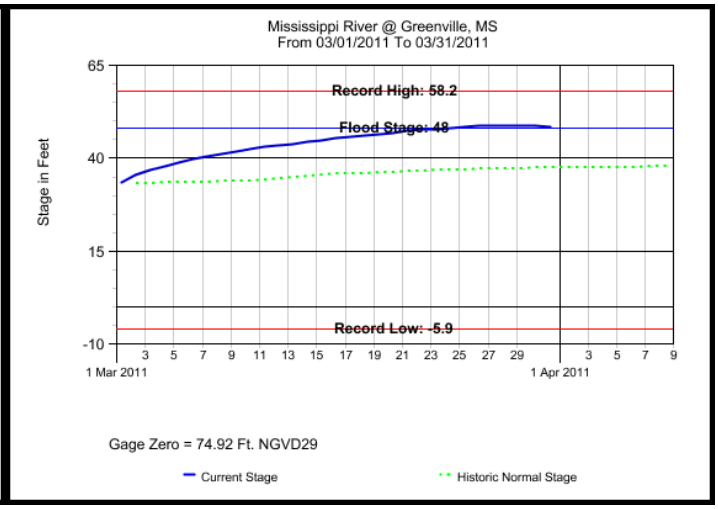
Mississippi River...

Mississippi River Plots for March, 2011

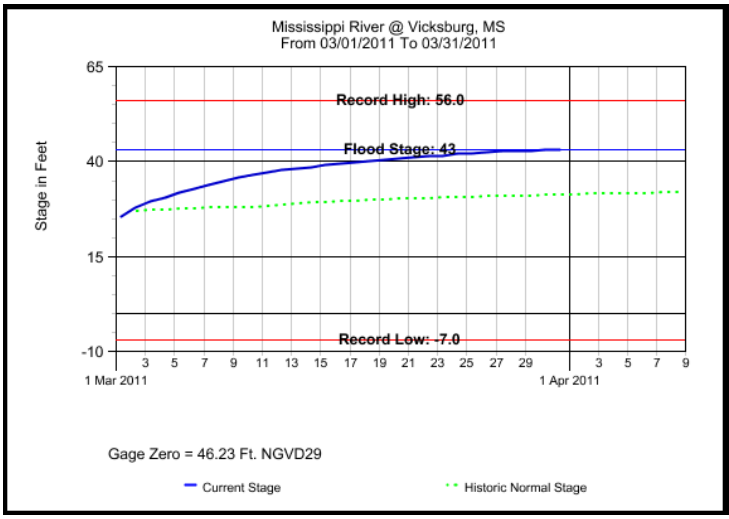
Plots Courtesy of the United States Army Corps of Engineers



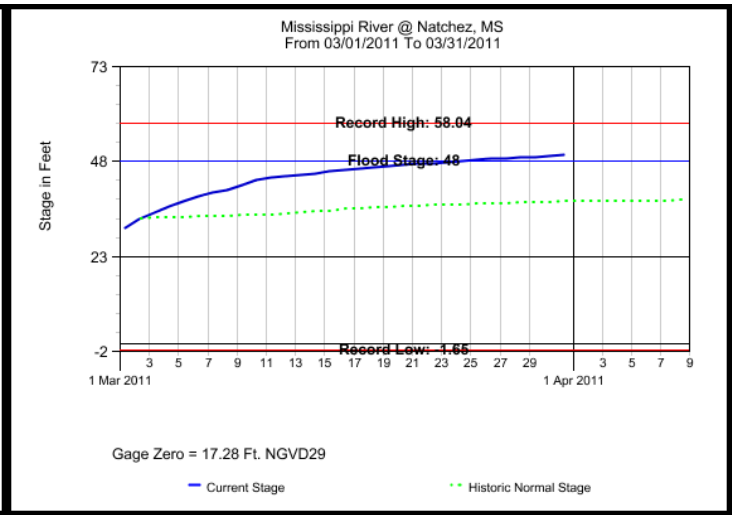
ARKANSAS CITY, MS



GREENVILLE, MS



VICKSBURG, MS



NATCHEZ, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	37.00	03/28/11	22.74	03/01/11
Greenville, MS	48	48.85	03/28/11	33.06	03/01/11
Vicksburg, MS	43	43.32	03/31/11	24.81	03/01/11
Natchez, MS	48	49.83	03/01/11	29.38	03/01/11

Total Flood Warning products issued: 24
Total Flood Statement products issued: 194
Total Flood Advisories MS River : 18
Daily Rainfall Products (RRA'S) issued: 31
Daily River Forecast Products (RVS'S) issued: 31
Daily River Stage products (RVA'S) issued: 31

Marty V. Pope

Service Hydrologist

&

Latrice Maxie

Assistant Hydrologist/Observing Program Leader (OPL)

Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather

Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District